43. (Amended) The DNA molecule according to claim 42, wherein the amino terminal domain of the G alpha protein of the first species comprises an interaction domain for a G beta protein, for a G gamma protein, and for an effector molecule.

44. (Amended) An isolated DNA molecule encoding a chimeric G alpha protein, wherein a first nucleic acid sequence encoding the five carboxy terminal amino acids of a G alpha protein from a first species is substituted for a second nucleic acid sequence encoding the five carboxy terminal amino acid sequences of a G alpha protein from a second species, which is different from the first species.

45. (Amended) A polypeptide encoded by the DNA molecule of claim 42 or 44.

REMARKS

By this Preliminary Amendment, claims 2, 5, 14, and 28 are canceled, and claims 1, 3, 6-8, 13, 17, 26, 27, and 42-45 are amended. Support for the amendments to claims 1 and 27 comes from the specification, as originally filed, and claims 5 and 28, for example. Claims 3 and 6-8 are amended to maintain proper dependencies. Claims 13, 17, 26, and 42-45 are amended to correct typographical errors and improve clarity. No new matter is added by the amendments. Currently, claims 1, 3, 4, 6-13, 15-27, and 29-51 are pending in this application.

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Applicants respectfully request prompt and favorable examination of this application. If the Examiner believes anything further is necessary in order to place this application in better condition for prompt examination, Applicants request that their undersigned representative be contacted at the telephone number or e-mail address listed below.

If there is any fee due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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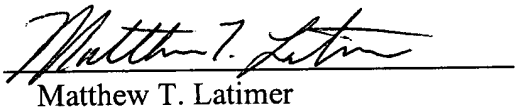
By: 

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Appendix

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APPENDIX

09/786,056

1. (Amended) A yeast host cell comprising a constitutively active heterologous G protein-coupled receptor.

3. (Amended) The host cell according to claim [2] 1, wherein the heterologous G protein-coupled receptor is modified at an intracellular domain of the G protein-coupled receptor.

6. (Amended) The host cell according to any one of claims 1, 3, or 4 [to 5], wherein the heterologous G protein-coupled receptor is an orphan receptor.

7. (Amended) The host cell according to claim [5] 1, wherein the heterologous G protein-coupled receptor is modified at amino acid residues Asp-Arg-Tyr in the domain proximal to the second intracellular loop of the G protein-coupled receptor.

8. (Amended) The host cell according to claim [5] 3, wherein the modified G protein-coupled receptor is a human alpha 2A adrenergic receptor and the modification comprises a point mutation of threonine to lysine at amino acid residue 373.

13. (Amended) A method for screening compounds capable of binding to G protein-coupled receptors, said method comprising [the steps of] (a) subjecting the host cell according to claim 1 to a test compound; and (b) measuring the effect of the test compound on cell growth.

17. (Amended) The host cell according to claim 15, wherein the mutation results in improved coupling between the heterologous G protein-coupled receptor and a heterotrimeric G protein or failure of the receptor to interact with cell [desesitization] desensitization or sequestration-internalization machinery, or proper plasma membrane localization.

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26. (Amended) A method for screening compounds capable of binding to G protein-coupled receptors, said method comprising [the steps of] (a) subjecting the host cell according to claims 15, 18, 20, or 21 to a test compound; and (b) measuring the effect of the test compound on cell growth.

27. (Amended) A method for expressing constitutively active heterologous G protein-coupled receptors in a yeast host cell comprising:

(a) transforming the host cell with a vector comprising a DNA sequence encoding a modified heterologous G protein-coupled receptor, wherein the modification results in a constitutively active G protein-coupled receptor; and

(b) culturing the transformed host cell to permit expression of the heterologous G protein-coupled receptor.

42. (Amended) An isolated DNA [sequence] molecule encoding a chimeric G alpha protein, wherein the DNA [sequence] molecule comprises a first nucleic acid sequence encoding the amino terminal domain of a G alpha protein of a first species, and a second nucleic acid sequence encoding the carboxy terminus of a G alpha protein of a second species, which is different from the first species.

43. (Amended) The DNA [sequence] molecule according to claim 42, wherein the amino terminal domain of the G alpha protein of the first species comprises an interaction domain for a G beta protein, for a G gamma protein, and for an effector molecule.

44. (Amended) An isolated DNA [sequence] molecule encoding a chimeric G alpha protein, wherein a first nucleic acid sequence encoding the five carboxy terminal amino acids of a G alpha protein from a first species is substituted for a second nucleic acid sequence encoding the five carboxy terminal amino acid sequences of a G alpha protein from a second species, which is different from the first species.

45. A polypeptide encoded by the DNA molecule of claim 42 or 44.

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